
March 2007

Rock River Valley Section

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Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

RRV Section and IAS Chapter Meeting

Hybrid Electric and Fuel Cell Vehicle Architectures for Transportation Power Generation

WHEN Thursday, March 8, 2007

WHERE

Rock Valley College, Woodward Technology Center, Rooms 117/119. I-90 to Riverside Blvd., exit and go west to Mulford Rd. Go south to 2nd light, turn east into RVC. Follow road to left to last building on right.

AGENDA

6:00 PM	Networking
6:30 PM	Dinner
7:30 PM	Presentation

PROGRAM

Automotive companies are developing hybrid and fuel cell vehicles for reducing emissions and for improving fuel economy. In addition, fuel cells are also being considered for on-board power generation in transportation systems. In this seminar, different types of hybrid and fuel cell vehicle strategies and their operation are described. A comparison of architectures of hybrid propulsion systems based on internal combustion engines & batteries, and hybrids based on fuel cells & batteries will be presented. The associated power electronics and control strategies will be explained. The use of Solid Oxide fuel cells for on-board power generation in transportation applications will also be presented. Future technology trends and strategies will be discussed.

- Challenges facing the Transportation Industry
- Electric, Hybrid, and Fuel Cell Ve-

hicles

- Types of Hybrid Vehicles: Series, Parallel, Series/Parallel
- Propulsion Requirements
- Power Electronics and Control strategies
- Comparative study of Hybrid Vehicles
- Fuel Cell Vehicle Systems
- Fuel cell Control Strategies
- FreedomCar Targets
- SOFCs for On-board Power Generation in Transportation Applications
- Hybrid SOFC – Gas Turbine APU

SPEAKER

Kaushik Rajashekara , Ph.D., received his B.Sc. degree from Bangalore University, India in 1971; B.Eng., M.Eng, and Ph.D. degrees from the Indian Institute of Science, Bangalore, India in 1974, 1977, and 1983, respectively. Dr. Rajashekara has worked at Delphi Corporation where he was the Chief Scientist for Propulsion, Fuel Cell & Advanced Energy Systems. In May 2006, he joined Rolls-Royce Corporation, Indianapolis, as a Senior Technologist working on the More Electric Aircraft systems.

Dr. Rajashekara has done extensive research in the area of power conversion for Transportation, Propulsion Systems for Electric, Hybrid, and Fuel cell vehicles, and Fuel Cells for Transportation and Power Generation applications. He has published more than

70 papers in international journals and conferences. He currently holds 20 patents and an additional 10 are pending. He has been a keynote speaker at several conferences. He has conducted short-term tutorial courses at universities in Asia, Europe, and local IEEE chapters.

Dr. Rajashekara is a Fellow of the IEEE for his contributions to the advancement of propulsion systems for electric and hybrid vehicles.

MEAL INFORMATION

Dinner menu: Vegetable lasagna, beef kebobs, and chicken kebobs, Greek salad, mixed vegetables, rice, rolls and butter, Baklava and apple squares. The costs are: member and student non-members: \$5, non-member: \$10, and student members: \$2. Please make your **dinner reservations** by calling **Ginger at 815-394-5696** or sending her an email (ginger.spinasanta@hs.utc.com) by **Monday, March 5, at 5pm**. Please include the following information: your name, phone number, email address, IEEE member number, and choice of dinner entrée. Unemployed members may call one of the officers for special arrangements.

NOTE

The meeting is open to the general public. You need not be an IEEE member. Guests are welcome. Please call Ginger at 815-394-5696 for questions.

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The Rock River Valley Section gratefully acknowledges the following companies and university for supporting Section Officers:

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Rock River Valley Section
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RRVS Calendar

- March RRVS Section Meeting March 8**
“Hybrid Electric and Fuel Cell Vehicle Architectures for Transportation Power Generation” at Rock Valley College, Rockford, IL
- April RRVS Section Meeting April 26**
“Ultra-Capacitor Energy Storage Technology & Power Electronic Applications” at Rock Valley College, Rockford, IL
- May RRVS Section Election/Picnic May 31**
At Hamilton Sundstrand Park, Belvidere, IL



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